

ABSTRACT OF THE DISCLOSURE

A balanced momentum probe holder in an apparatus for characterizing a sample surface has first and second members each having extensible and retractable distal ends. The distal ends extend or retract substantially simultaneously in response to a signal from a detector thus balancing the momentums of the first and second members and reducing the net momentum of
5 the probe holder to essentially zero. Balancing the momentum of the probe holder reduces parasitic oscillations in the apparatus thus enhancing performance.